

A Conservation Plant Released by the Natural Resources Conservation Service
Bismarck Plant Materials Center, Bismarck, North Dakota

Bismarck Germplasm

Stiff Sunflower

Helianthus pauciflorus Nutt. ssp. *pauciflorus*

Bismarck Germplasm stiff sunflower (*Helianthus pauciflorus* Nutt. ssp. *pauciflorus*) is a Selected Class of natural germplasm released in 2000 by the United States Department of Agriculture, Natural Resources Conservation Service (NRCS) Bismarck Plant Materials Center; in cooperation with the North Dakota, South Dakota, and Minnesota Agricultural Experiment Stations.



Stiff sunflower has long flower stalks and basal leaves.

Description

Stiff sunflower is a strongly rhizomatous, native, perennial forb which often forms dense colonies. Plant height varies from 1 to 2 feet. The stiff, leathery leaves occur mostly at the base of the plant and have 3 prominent ribs; stems are stiff and rough. Blossoming occurs in late summer. The 2 ½ inch wide flowers have yellow petals surrounding the brown to purplish centers.

Source

Bismarck Germplasm stiff sunflower is a composite of the following nine accessions collected as seed in western and central North Dakota in 1975. The nine accessions were evaluated for nine years with no major difference. All collections were mixed and vegetatively increased, starting in 1986.

Accession	County	Location
9005952-ND1350	Burleigh	sandy site southeast of Bismarck, ND
9005953-ND1395	Burleigh	mine spoil SW of field planting, Truax-Traer Coal Mine, Wilton, ND
9005954-ND1396	Grant	clayey site two miles west of Elgin, ND
9005955-ND1397	Slope	2.3 miles west of limber pine area
9005956-ND1399	Burleigh	southwest corner of the Truax-Traer Coal Mine near Wilton, ND
9005957-ND1400	Mercer	sandy site 1.9 miles west of Stanton turnoff at Hwy 200
9005958-ND1401	Dunn	light soil at the Killdeer Mountain Pass
9005959-ND1430	Slope	Johnson Ranch
9005960-ND1486	Oliver	mine spoil with low SAR at Baukol-Noonan Mine, pothole wildlife planting

Conservation Uses

Bismarck Germplasm stiff sunflower is an important forb which would add diversity in seed mixes for a wide range of native grass plantings such as prairie restoration, native landscaping and range improvement. It also provides erosion control, quality forage and wildlife benefits. It is a valuable plant for bees, butterflies, and birds.

Area of Adaptation and Use

The area of adaptation for Bismarck Germplasm stiff sunflower has not been tested. Stiff sunflower is naturally adapted to the grasslands of the Northern Great Plains, from eastern Montana east through North Dakota and South Dakota to Minnesota. It grows on many different soils but is found primarily on upland range sites such as silty, shallow and thin upland; and less frequently on lowlands such as limy subirrigated. It is readily eaten by livestock so is rarely found on lands which have been long overgrazed.

Establishment and Management for Conservation Plantings

Stiff sunflower is not usually seeded as a single species but rather in a mix of other native species. On moist sites, it can be included with little bluestem, big bluestem, and switchgrass. On drier sites, it can be mixed with blue grama, little bluestem, and western wheatgrass. There are approximately 85,000 seeds/lb. As part of a mixture, a seeding rate of ¼ pure live seed (PLS) lb/ac will result in about 1 seed per 2 square feet. If a denser stand of stiff sunflower is desired for specific areas,

seeding rates up to 1 PLS lb/ac may be used. Stiff sunflower is a small, smooth seed that flows easily through most drills. Generally, seed is mixed with other native species. If seed settles to the bottom of the box, it should be added in frequent intervals rather than all at once. Plant seed into a firm seedbed at a depth no greater than ½ inch. Seed of stiff sunflower has high dormancy. A majority of the seed planted in the spring may not germinate until the following spring. Dormant seeding with winter stratification will enhance germination.

Ecological Considerations

Stiff sunflower is native to the plains. It will spread vegetatively on disturbed sites, but its seed does not easily germinate. The seed requires cold stratification for germination. This selection is not invasive based on the assessment guidelines set forth by the NRCS Plant Materials Program.

On adapted sites, stiff sunflower may spread rapidly by rhizomes. This species is not recommended in small garden or prairie landscape plantings unless spread is not a concern, or precautions are taken (edging, hand-roguing, or herbicides). Stiff sunflower is readily controlled by most broadleaf herbicides.

Seed and Plant Production

The following are seeding rate recommendations for seed production based on different row spacing.

Row Spacing (inch)	Seeding Rate * (PLS lb/acre)
12	7.5
24	3.8
30	3.0
36	2.5
42	2.1

*seeding rate based on 85,000 seeds/lb with a target of 15 seeds per ft of row.

As the plant is rhizomatous, space between rows may fill in unless tillage is used. Seed can be harvested with a standard combine and conditioned with a fanning mill. Seed weevils and other insects may pose problems for seed production.

Availability

For conservation use: Bismarck Germplasm stiff sunflower is available in limited quantities from commercial vendors and seed growers. The certified seed is designated as Selected Class, Generation 2, 3, or 4.

For seed or plant increase: Generation 1 (G1) seed of Bismarck Germplasm stiff sunflower is maintained by the Bismarck Plant Materials Center and is available in limited quantities for commercial seed increase. Seed is distributed through the North Dakota State University Foundation Seedstocks Program as a Selected Class (green tag) of natural germplasm. Certification is limited to four generations.

Citation

Release Brochure for Bismarck Germplasm Stiff Sunflower (*Helianthus pauciflorus* ssp. *pauciflorus*). 2022. USDA-Natural Resources Conservation Service, Bismarck Plant Materials Center, Bismarck, ND 58504.

For additional information about this and other plants, please contact your local USDA Service Center, NRCS field office, or Conservation District <<http://www.nrcs.usda.gov/>>, and visit the PLANTS Web site <<http://plants.usda.gov/>> or the Plant Materials Program Web site <<http://www.plant-materials.nrcs.usda.gov/>>

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